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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/749,375	12/21/2000	Thomas Boehme	DE9-1999-0085 (590.027)	5538

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FERENCE & ASSOCIATES
400 BROAD STREET
PITTSBURGH, PA 15143

EXAMINER

HARPER, V PAUL

ART UNIT	PAPER NUMBER
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2654

DATE MAILED: 08/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/749,375

Applicant(s)

BOEHME, THOMAS

Examiner

V. Paul Harper

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

- the log equation on page 8, line 3 is in improper form,
- the reference to "chapter 4" is not understood,

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Gadd ("PHONIX: The Algorithm" *Program*, October 1990).

Regarding claim 1, Gadd teaches an algorithm for phonetic retrieval of names (p. 363, §1). Gadd also teaches "**a method for coding and storing phonetic information representable as an original character sequence, comprising the step of coding the phonetic information in a bit code,**" which corresponds to performing phonetic substitutions on names and representing them with codes (pp. 365-366, §5).

Regarding claim 2, Gadd teaches everything claimed, as applied above (see claim 1). In addition, Gadd teaches **“the step of deriving said phonetic information from names”** (§5, p. 365, 1st sentence).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 3-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gadd in view of Pfeifer et al. (“Retrieval Effectiveness of Proper Name Search Methods,” Information Processing and Management, 1996), hereinafter referred to as Pfeifer and further in view of well know prior art (MPEP 2144.03).

Regarding claim 3, Gadd teaches everything claimed, as applied above (see claim 1), but Gadd does not specifically teach **“the bit code related to said phonetic information has a length of 32 bits.”** However, the examiner contends that this concept was well known in the art, as taught by Pfeifer.

In the same field of endeavor, Pfeifer evaluates proper name search methods including an evaluation of the Phonix4 algorithm with a code length of four characters (§5,3 “Analysis”).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Gadd by specifically providing a four character Phonix code, as taught by Pfeifer, since this is a standard variant of the Phonix algorithm.

Furthermore, Gadd in view of Pfeifer do not specifically teach a code length of 32 bits. However, the examiner takes official notice of the fact that the standard representation of an ASCII character as 8 bits was well known in the art.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Gadd in view of Pfeifer such that an 8 bit ASCII code was use, since this is a standard length.

Thus the code length taught by Gadd in view of Pfeifer and well known prior art is 32 bits (4 ASCII characters X 8 bits/char).

Regarding claim 4, Gadd in view of Pfeifer and well-known prior art teach everything claimed, as applied above (see claim 3). In addition, Gadd teaches **“the step of replacing with at least one group of characters, consisting of said original character sequence, with a respective number of normalized character groups having the same or a similar sound when spoken but a different spelling”** (§5, “The PHONIX algorithm”, in particular step a)).

Regarding claim 5, Gadd in view of Pfeifer and well-known prior art teach everything claimed, as applied above (see claim 4). In addition, Gadd teaches **“covering the beginning portion of said original character sequence with a first normalized character group; covering the middle portion of said original**

character sequence with one or more of said normalized character groups; and covering the end portion of said original character sequence with one of said normalized character groups” (p. 367, table of phonetic substitutions for the start, middle and end of a word).

Regarding claim 6, Gadd in view of Pfeifer and well-known prior art teach everything claimed, as applied above (see claim 5). In addition, Gadd teaches **“the step of extracting said normalized character groups from particular tables providing a mapping between said original character sequence groups and said normalized character groups by a respective provision of a cross-reference in said table”** (p. 365, step a) “perform substitutions” with the tables given on pp. 367-369).

Regarding claim 7, Gadd in view of Pfeifer and well-known prior art teach everything claimed, as applied above (see claim 6). In addition, Gadd teaches **“... said tables comprising groups of said original character sequences”**, which corresponds to the tables given on pp. 367-369, but Gadd in view of Pfeifer and well-known prior art do not specifically teach **“the step of empirically rounding said tables”** However, the examiner contends that this concept was well known in the art, as taught by Pfeifer.

Pfeifer further teaches that algorithms have been *developed* for other languages and that this includes adapting character classes or substitution rules where this development would necessarily require an empirical technique (§2, ¶’s 1-3).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Gadd in view of Pfeifer and well-known prior art by empirically developing the character substitution rules, as taught by Pfeifer, since this is the common (and most likely only way) to develop these tables.

Regarding claim 8, Gadd in view of Pfeifer and well-known prior art teach everything claimed, as applied above (see claim 7). But Gadd in view of Pfeifer and well-known prior art do not specifically teach “. . . **reflect the [language] specific phonetics.**” However, the examiner contends that this concept was well known in the art, as taught by Pfeifer.

Pfeifer further teaches that the substitution rules can be developed to represent the phonetics of different languages (§2, ¶'s 1-3).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Gadd in view of Pfeifer and well-known prior art by specifically providing the language support, as taught by Pfeifer, since this capability will improve performance in a given language.

However, Gadd in view of Pfeifer and well-known prior art do not specifically teach “**the step of spelling actual language in use reflect the specific phonetics.**” However, the examiner takes official notice of the fact that a means of selectively alternating between known elements (including spelling the name of the alternative) was well known in the art.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Gadd in view of Pfeifer and well-known prior

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art such that the language in use could be selected, since appropriate language-specific codes and substitution rules improve results.

Regarding claim 9, Gadd in view of Pfeifer and well-known prior art teach everything claimed, as applied above (see claim 5). But Gadd in view of Pfeifer and well-known prior art do not specifically teach **“the step of decreasing a coding precision with a distance from the beginning of said original character sequence.”** However, the examiner takes official notice of the fact that the use of bit-wise code of a size appropriate to the character or number being represented was well known in the art. In this case, Gadd teaches a code that consists of a character followed by a sequence of numbers ranging from 1-8 where the character can be most efficiently represented with 5 bits (for 26 letters in alphabet, i.e., 2^5 equals 32, 5 being the smallest number of bits that can represent 26 letters) and the number with 3 bits (for the 8 numbers 0-7) resulting in a coding with decreasing precision for the original character (i.e., 5 bits to 3 bits).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Gadd in view of Pfeifer and well-known prior art using the above mentioned coding scheme, since this would result in the most efficient use of memory.

Regarding claim 10, Gadd in view of Pfeifer and well-known prior art teach everything claimed, as applied above (see claim 9). In addition, as argued above in the rejection of claim 9, Gadd in view of Pfeifer and well-known prior art teach **“the step of**

coding a first character with five (5) bits," since this is the most efficient representation of a letter from an alphabet of 26 letters.

Regarding claim 11, the limitations in this claim are similar to the limitations in claims 1, 2, 4, 5, 6, 7, 8, 9, and 10, and are rejected for the same reasons.

Regarding claim 12, the limitation in this claim is similar to the limitation in claim 3 and is rejected for the same reasons.

Regarding claim 13, the limitations in this claim are similar to the limitations in claims 1, 2, 4, 5, 6, 7, 8, 9, and 10, and are rejected for the same reasons.

Citation of Pertinent Art

4. The following prior art made of record but not relied upon is considered pertinent to the applicant's disclosure:

- a. Cuthbertson et al. (US Patent 5,724,597) teach a method for matching names and addresses.
- b. Erikson ("Approximate Swedish Name Matching Survey and Test of Different Algorithms," Nada Report TRITA-NA-E9721, 1997) discusses various name matching algorithms.
- c. Lait et al. ("An Assessment of Name Matching Algorithms," Technical Report, Department of Computing Science, University of Newcastle upon Tyne, UK, 1996) describe various name matching algorithms.

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Conclusion

Any response to this office action should be mailed to:

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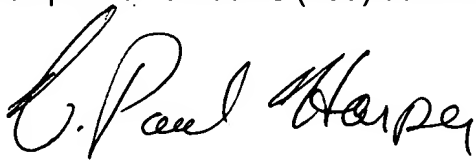
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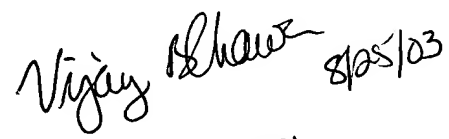
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. V. Paul Harper whose telephone number is (703) 305-4197. The examiner can normally be reached on Monday through Friday from 8:00 a.m. to 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil, can be reached on (703) 305-9645. The fax phone number for the Technology Center 2600 is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service office whose telephone number is (703) 306-0377.



VPH/vph
August 15, 2003



VIJAY CHAWAN
PRIMARY EXAMINER